

which are currently being made without accurate flow measurement, and permits the water manager, whether a governmental agency, irrigation district, private firm or individual farmer, to manage and conserve water. It will be appreciated that in many instances the person monitoring the control and recording of flow volumes will be of very limited expertise and thus it is important that the control device employed be as simple and trouble free as possible. It is also important that the interior of the device be readily accessible for repairs or other purposes.

A key feature of the present invention concerns the provision of a single housing for housing the sensor, central processing unit and display device and, in particular, the provision of a housing of especially advantageous construction. In this regard, the housing comprises a top portion, a bottom portion mechanically connected to the top portion, and a downwardly depending member connected to the bottom portion of the housing, with the sensor being received in the downwardly depending member. This results in a highly compact, effective arrangement wherein the sensor is protected and the interior of the housing is easy to access when necessary.

Turning to the cited references, it is respectfully submitted that, even assuming arguendo that it would be obvious to combine the Combs et al and Wissenbach et al patents, the resultant hybrid combination would not meet the terms of the claims now presented. In this regard, claim 1, as amended, is basically a combination of claims 1, 4 and 5. The Examiner admits that the Combs et al patent does not disclose at least three features of amended claim 1 (see the discussion in the first full paragraph on page three of the Office Action) but contends that the Wissenbach et al patent discloses these features. In this regard, the Examiner contends that the Wissenbach et al patent discloses "a depending member that receives a sensor such as element 41 as noted in Figure 3." It is respectfully submitted that that contention is not well taken. If the Examiner is simply contending that element 41 is a sensor, this is, of course, correct but it is respectfully submitted that the reference does not disclose a depending member that receives sensor 41. This is evident, for example, from Figure 11 which shows sensor 41 simply hanging down from the main housing. Sensor 41 includes a cable with a sensor head at one end and a plug at the other and the plug is simply plugged into the housing as shown in Figure 11 and other figures. Thus, it is respectfully

submitted that there is no teaching of a housing including a downwardly depending member connected to the bottom portion of the housing with the sensor being received in the downwardly depending member. Accordingly, it is respectfully submitted that, for at least his reason, amended claim 1 patentably defines over the references cited.

For the reasons set forth above, allowance of the application in its present form is respectfully solicited.

Respectfully submitted,



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ATTACHMENT B

Marked Up Replacement Claims

Following herewith is a marked up copy of each rewritten claim together with all other pending claims.

1. (AMENDED) An automated turnout control system for controlling the flow of water from a main channel to a turnout channel, said system comprising:
 - a flow measurement structure located in the turnout channel;
 - a water level sensor for measuring the water level at said flow measurement structure and for producing a corresponding output signal;
 - an adjustable flow control gate for controlling the flow of water into said turnout channel from said main channel;
 - a gate actuator for adjusting said flow control gate to an adjusted setting so as to control the flow of water therethrough;
 - a gate setting sensing means for sensing the adjusted setting and for producing a corresponding output signal; and
 - a controller, connected to said water level sensor, said gate setting sensing means and said gate actuator, for receiving said output signals from said water level sensor and said gate setting sensing means and for controlling said gate actuator to adjust the gate setting based on said output signals, said housing comprises a top portion, a bottom portion mechanically connected to the top portion, and a downwardly depending member connected to said bottom portion of said housing, and said sensor being received in said downwardly depending member.
2. The automated turnout control system of claim 1 wherein said gate comprises a movable gate member movable to a plurality of flow control positions including a fully open position wherein maximum flow is provided and a fully closed position wherein flow is stopped.

3. The automated turnout of claim 2 wherein said gate setting sensing means comprises a position sensor for sensing the position of said movable gate member.

6. The automated turnout of claim 1 wherein said controller comprises a central processing unit.

7. The automated turnout of claim 6 wherein said central processing unit uses a proportional integral algorithm in controlling said gate actuator.

8. The automated turnout of claim 7 wherein said central processing unit uses a closed loop control algorithm.